

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
10 June 2004 (10.06.2004)

PCT

(10) International Publication Number
WO 2004/048650 A1

(51) International Patent Classification⁷: **D01D 5/30**

Kyungsangbok-do (KR). LEE, Sung-Kwan [KR/KR];
212 Gongdan-dong, Gumi-city, 730-030, Kyungsang-
bok-do (KR).

(21) International Application Number:
PCT/KR2003/002522

(22) International Filing Date:
21 November 2003 (21.11.2003)

(74) Agent: **CHO, Hwal-Rai**; Suite No. 1507 Yoksam Heights
Bldg, 642-19, Yoksam-dong, Kangnam-gu, 135-981 Seoul
(KR).

(25) Filing Language: Korean

(81) Designated States (*national*): AE, AG, AL, AM, AU, AZ,
BA, BB, BR, BY, BZ, CA, CN, CO, CR, CU, DM, DZ, EC,
GD, GE, GH, GM, HR, ID, IL, IN, IS, JP, KE, KG, KP, KZ,
LC, LK, LR, LS, LT, LV, MA, MD, MG, MK, MN, MW,
MX, MZ, NI, NO, NZ, OM, PG, PH, PL, RU, SC, SD, SG,
SL, SY, TJ, TM, TN, TT, TZ, UA, UG, US, UZ, VC, VN,
YU, ZA, ZM, ZW.

(26) Publication Language: English

(30) Priority Data:
10-2002-0073701
26 November 2002 (26.11.2002) KR

(71) Applicant (*for all designated States except US*): **KOLON
INDUSTRIES, INC** [KR/KR]; KOLON Tower, 1-23,
byulyang-dong, Kwacheon-si, 427-040 Kyunggi-do (KR).

(84) Designated States (*regional*): European patent (AT, BE,
BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU,
IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR).

(72) Inventors; and

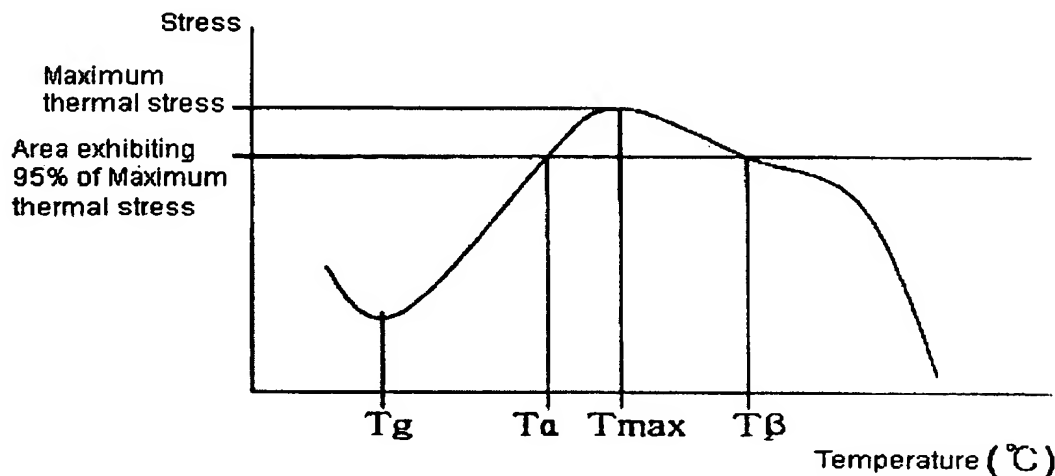
Published:

(75) Inventors/Applicants (*for US only*): **YOON, Joon-Young**
[KR/KR]; 101-1506 Bosung hwangsil 1st APT,
Sakok-dong, Gumi-city, 730-110, Kyungsangbok-do
(KR). **LEE, Young-Hwan** [KR/KR]; 311-1304 Dorang
3 jugong APT, Dorang 2-dong, Gumi-city, 730-760,

— with international search report

*For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.*

(54) Title: A HIGH SHRINKAGE SIDE BY SIDE TYPE COMPOSITE FILAMENT AND A METHOD FOR MANUFACTURING THE SAME



(57) Abstract: The present invention relates to a high shrinkage side-by-side type composite filament, wherein two kinds of thermoplastic polymers are arranged side by side type and a boiling water shrinkage (Sr_2) measured by the method (initial load = notified denier x 1/10g, static load = notified denier x 20/10g) of clause 5.10 of JIS L 1090 is 20 to 75% of a boiling water shrinkage (Sr_1) measured by the method (initial load = notified denier x 1/30g, static load = notified denier x 40/30g) of clause 7.15 of JIS L 1013. The side-by-side type composite filament, is made of two kinds of thermoplastic polymers having a number average molecular weight difference (\bar{M}_n) of 5,000 to 15,000 upon spinning and the composite filament is drawn and heat-treated so as to satisfy the following physical properties: Temperature area exhibiting 95% of maximum thermal stress (T_{max} , 95%): 120 to 230°C Range of maximum thermal stress per denier : 0.1 to 0.4g/denier